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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Ilan et al

Serial No. 10/763,104

Group Art Unit: Not yet known

Filed: January 22, 2004

Examiner: Not yet determined

Title: LABEL TARGET AND LABELING REAGENTS COMPRISING BACKBONES WITH AT  
LEAST TWO CONSECUTIVE PEPTIDE BONDS

TRANSMITTAL  
INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:


Transmitted herewith is an Information Disclosure Statement which is being filed in accordance with 37 C.F.R. §§ 1.56 and 1.97-1.98. The items listed on Form PTO-1449, a copy of which is enclosed, may be deemed to be pertinent to the above-identified application and are made of record to assist the Patent and Trademark Office in its examination of this application. The Examiner is respectfully requested to fully consider the items and to independently ascertain their teaching.

**PRIORITY FIRST CLASS MAIL CERTIFICATE**

I hereby certify that this paper and any attachments herein are being deposited on the date below with the United States Postal Service as Priority First Class mail to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

  
Ronald C. Fedus

Reg. No. 32,567

  
Date

Enz-61(D4)

1. ☐ For each of the following items listed on the enclosed copy of Form PTO-1449 that is not in the English language, an English language translation of that item or a portion thereof or a concise explanation of the relevance of that item is enclosed:
2. ☐ For each of the following items listed on the enclosed copy of form PTO-1449 that is not in the English language, a concise explanation of the relevance of that item is incorporated in the specification of the above-identified application.
3. ☐ Any copy of the items on the enclosed copy of Form PTO-1449 that is not enclosed with this Information Disclosure Statement was previously cited by or submitted to the Patent and Trademark Office in the prior ☐ Divisional or ☐ Continuation-In-Part application under 37 C.F.R. §1.60, U.S. Serial No. \_\_\_\_\_, filed \_\_\_\_\_.
4. ☐ No fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with:
  - ☐ 37 C.F.R. §1.97(b)(1), within three months of the filing date of the above-identified application.
  - ☐ 37 C.F.R. §1.97(b)(2), within three months of the date of entry into the national stage as set forth in §1.491 in an international application.
  - ☐ 37 C.F.R. §1.97(b)(3), before the mailing date of a first Office action on the merits.
5. ☐ No fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(c), after the period specified in paragraph 4 above but before the mailing date of a final action or a Notice of Allowance (where there has been no prior final action), and is accompanied by one of the certifications pursuant to 37 C.F.R. §1.97(e) set forth in paragraph 9 below.
6. ☒ A fee is due under 37 C.F.R. §1.17(p) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(c), after the period specified in paragraph 4 above but before the mailing date of a final action or a notice of allowance (where there has been no prior final action):
  - ☐ A check in the amount of \$180.00 is enclosed in payment of the fee.

☒ Charge the fee to Deposit Account No. 05-1135, Order No. **Enz-61(D4)**. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

7. ☐ A fee is due under 37 C.F.R. §1.17(i)(1) for this Information Disclosure Statement since it is being filed in compliance with 37 C.F.R. §1.97(d), after the mailing date of a final action or a notice of allowance, whichever comes first, but before payment of the issue fee, and is accompanied by:
- a. one of the certification pursuant to 37 C.F.R. §1.97(e) set forth in paragraph 9 below; and
  - b. the attached petition requesting consideration of this Information Disclosure Statement; and
  - c. the fee due under 37 C.F.R. §1.17(i)(1) which is paid as set forth in paragraph 10 below.
8. ☐ A fee is due under 37 C.F.R. §1.17(i)(1) for this Information Disclosure Statement since it is being filed in compliance with:
- a. ☐ 37 C.F.R. §1.313(b)(3), after the issue fee has been paid and information cited in this Information Disclosure Statement may render at least one claim unpatentable and is accompanied by the attached Petition To Withdraw Application From Issue;
  - b. ☐ 37 C.F.R. §1.313(b)(5), after the issue fee has been paid and information cited in this Information Disclosure Statement is to be considered in a Continuation application upon abandonment of the instant application and is accompanied by the attached Petition To Withdraw Application From Issue.
  - c. ☐ The fee due under 37 C.F.R. §1.17(i)(1) is paid as set forth in paragraph 10 below.
9. ☐ I hereby certify that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement.
- ☐ I hereby certify that no item of information in the Information Disclosure Statement filed herewith was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in §1.56(c) more than three months prior to the filing of this Information Disclosure Statement.

**Enz-61(D4)**

10. [ ] A check in the amount of \$180.00 is enclosed in payment of the fee due under 37 C.F.R. §1.17(i)(1).

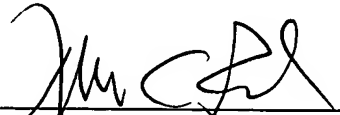
[X] Charge the fee under 37 C.F.R. §1.17(i)(1) to Deposit Account No. 05-1135. Order No. **Enz-61(D4)**. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

[x] The Commissioner is hereby authorized to charge any additional fees which may be required for this Information Disclosure Statement, or credit any overpayment to Deposit Account No. 05-1135. A DUPLICATE COPY OF THIS SHEET IS ATTACHED.

Respectfully submitted,

Dated: March 8, 2004

By:



Ronald C. Fedus

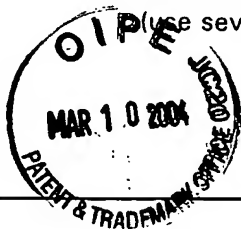
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**Enz-61(D4)**

Form PTO-1449 U.S. Department of Commerce  (REV. 8-83) Patent and Trademark Office  INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)	Atty. Docket No. ENZ-61(D4)	Serial No. 10/763,104
	Applicants: Ilan, et al	
	Filed: January 22, 2004	Group: Not yet known



## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPRO- PRIATE
	5 4 9 4 8 1 0		Barany, et al			
	6 0 0 4 2 8 6		Bellhouse, et al			
	5 5 8 2 9 8 4		Bieniarz, et al			
	5 5 9 9 9 3 2		Bieniarz, et al			
	4 9 7 8 6 1 4		Bronstein, IY			
	5 4 6 2 8 5 4		Coassin, et al			

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRAN- SLATION YES NO
EP	0 6 6 7 3 9 3	8/16/95	Rabbani et al	A1		
EP	0 0 7 0 6 8 5	7/14/82	Heller, et al	A1		

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Ball, et al., "The use of tailed octamer primers for cycle sequencing," <u>Nucl. Acids. Res.</u> 26:5225-5227 (1998)
	Baranov, et al., "A new technique for the characterization of long-range tertiary contacts in large RNA molecules: insertion of a photolabel at a selected position in 16S rRNA within the Escherichia coli ribosome," <u>Nucl. Acids Res.</u> 25:2266-2273 (1997)
	Dale, R.M., et al., "Direct covalent mercuration of nucleotides and polynucleotides," <u>Biochemistry</u> 14:2447-2457 (1975)
	Dale, R.M., et al., "The synthesis and enzymatic polymerization of nucleotide containing mercury: potential tools for nucleic acid sequencing and structural analysis," <u>Proc. Natl. Acad. Sci. USA</u> 70:2238-2242 (1973)
	Doan, T.L., et al., "Targeted cleavage of polynucleotides by complementary oligonucleotides covalently linked to iron-porphyrins," <u>Biochemistry</u> 25:6736-6739 (1986)
	Eglinton, G., et al., "A coupling of acetylenic compounds," <u>Adv. Organic Synthesis</u> 4:225-328 (1963)

EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449 U.S. Department of Commerce  (REV. 8-83) Patent and Trademark Office  <b>INFORMATION DISCLOSURE CITATION</b> (use several sheets if necessary)	Atty. Docket No. ENZ-61(D4)	Serial No. 10/763,104
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## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPRO- PRIATE
	5 8 4 9 4 8 0		Cros, et al			
	4 8 9 4 3 2 5		Engelhardt, et al			
	5 2 4 1 0 6 0		Engelhardt, et al			
	5 2 8 8 6 0 9		Engelhardt, et al			
	6 2 2 1 5 8 1		Engelhardt, et al			
	4 3 7 5 9 7 2		Forgione, et al			
	5 2 1 0 0 1 5		Gelfand, et al			

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRAN- SLATION YES NO
WO	9 9 2 8 5 0 0	11/27/98	Lee, et al			
EP	0 9 1 7 0 3 9	1/12/00	Rabbani, et al	A1		

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Enzo Biochem, Catalog Nos. 42722, 4723, 4724, New York, NY
	Ernst, et al., "Cyanine dye labeling reagents for sulfhydryl groups," <u>Cytometry</u> 10:3-10 (1989)
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	Kawase, et al., "Studies on nucleic acid interactions. I. Stabilities of mini-duplexes (dG2A4XA4G2-dC2T4YT4C2) and self-complementary d(GGGAAXYTTCCC) containing deoxyinosine and other mismatched bases," <u>Nucl. Acids. Res.</u> 14:7727-7736 (1986)
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	Larock, "Organomercurials in Organic Synthesis," <u>Tetrahedron</u> 38:1713-1754 (1982)

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	6 3 3 8 9 5 4		Gemen, B.			
	5 6 4 6 2 6 4		Glazer, et al			
	5 2 4 8 6 1 8		Haces, A.			
	5 7 3 0 8 4 9		Hamby, et al			
	4 7 0 7 4 5 4		Hendrix, JL			
	5 4 6 4 7 4 1		Hendrix, JL			
	5 9 9 4 0 5 6		Higuchi, RG			
	5 0 4 7 5 1 9		Hobbs, et al			

## FOREIGN PATENT DOCUMENTS

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EP	1 2 7 5 7 3 7	1/15/03	Rabbani, et al	A1		
EP	1 3 4 4 8 3 5	11/17/03	Rabbani, et al	A1		

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Lee, L.G., et al., "DNA sequencing with dye-labeled terminators and T7 DNA polymerase: effect of dyes and dNTPs on incorporation of dye-terminators and probability analysis of termination fragments," <u>Nucl. Acids Res.</u> 20:2471-2488 (1992)
	Liu, H., et al., "PCR amplification using deoxyinosine to replace an entire codon and at ambiguous positions," <u>Biotechniques</u> 16:24-26 (1994)
	Liu, D., et al., "Stable human immunodeficiency virus type 1 (HIV-1) resistance in transformed CD4+ monocytic cells treated with multitargeting HIV-1 antisense sequences incorporated into U1 snRNA," <u>J. Virol</u> 71:4079-4085 (1997)
	Loakes, D., et al., "5-Nitroindole as an universal base analogue," <u>Nucl. Acids Res.</u> 22:4039-4043 (1994)
	Loakes, D., "The applications of universal DNA base analogues," <u>Nucl. Acids Res.</u> 29:2437-2447 (2001)

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	6 2 2 8 5 7 8		Impraim, et al			
	5 5 5 4 5 1 6		Kacien, et al			
	5 9 4 8 6 4 8		Kahn, et al			
	5 9 4 5 2 8 3		Kwok, et al			
	5 9 4 5 5 2 6		Lee, et al			
	5 1 1 8 8 0 1		Lizardi, et al			
	5 1 3 0 2 3 8		Malek, et al			
	4 6 8 3 2 0 2		Mullis, et al			

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRAN- SLATION YES NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Maulding, D.R., et al., "Chemiluminescence from Reactions of Electrophilic Oxamides with Hydrogen Peroxide and Fluorescent Compounds," <u>J. Org. Chem.</u> 33:250-254 (1968)
	Moan, J., et al., "Porphyrin photosensitization and phototherapy," <u>Photochem. Photobio.</u> 43:681-690 (1986)
	Mujumdar, R.B., et al., "Cyanine dye labeling reagents containing isothiocyanate groups," <u>Cytometry</u> 10:11-19 (1989)
	Mujumdar, R.B., et al., "Cyanine dye labeling reagents: sulfoindocyanine succinimidyl esters," <u>Bioconjugate Chemistry</u> 4:105-111 (1993)
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	Okayama, H., et al., "High efficiency cloning of full length cDNA," <u>Mol. Cell. Biol.</u> 2:161 (1982)

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	5 8 6 6 3 3 6		Nazarenko, et al			
	6 1 1 4 3 5 0		Randall, et al			
	6 1 1 0 6 3 0		Reddy, et al			
	6 0 0 1 5 7 3		Roalent, C.			
	5 7 0 7 5 5 9		Schaap, et al			
	6 3 2 3 3 3 7		Singer, et al			

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRAN- SLATION YES NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Rieke, R.D., "The preparation of highly reactive metals and the development of novel organometallic reagents," <i>Aldrichimica Acta</i> 33:52-60 (2000)
	Robins, M.J., et al., "Nucleic Acid Related Compounds. 39. Efficient Conversion of 5-Iodo to 5-Alkynyl and Derived 5-Substituted Uracil Bases and Nucleosides," <i>J. Org. Chem.</i> 48:1854-1862 (1983)
	Schaap, et al., "Chemical and Enzymatic Triggering of 1,2-Dioxetanes. 1: Aryl Esterase-Catalyzed Chemiluminescence from a Naphthyl Acetate-Substituted 1,2-Dioxetane," <i>Tetrahedron Letters</i> 28:935-938 (1987)
	Schaap, A.P., et al., "Chemical and Enzymatic Triggering of 1,2-Dioxetanes. 3: Alkaline Phosphatase-Catalyzed Chemiluminescence from an Aryl Phosphate-Substituted Dioxetane," <i>Tetrahedron Letters</i> 28:1159-1163 (1987)
	Selinger, D.W., et al., "RNA expression analysis using a 30 base pair resolution <i>Escherichia coli</i> genome array," <i>Nature Biotech.</i> 18:1262-1268 (2000)
	Shibahara, S., et al., "Site-directed cleavage of RNA," <i>Nucl. Acids Res.</i> 15:4403-4415 (1987)

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## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPRO- PRIATE
	4 8 6 8 1 0 3		Stavrianopolous, et al			
	4 9 5 2 6 8 5		Stavrianopolous, et al			
	4 9 9 4 3 7 3		Stavrianopolous, et al			
	5 0 1 3 8 3 1		Stavrianopolous, et al			
	5 5 7 8 8 3 2		Trulson, et al			
	5 1 3 2 2 0 4		Urdea, et al			
	5 8 9 1 6 3 6		Van Gelder, et al			
	5 2 6 8 4 8 6		Waggoner, et al			

## FOREIGN PATENT DOCUMENTS

DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	TRAN- SLATION YES NO

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Southwick, P.L., et al., "Cyanine dye labeling reagents - carboxymethylindocyanine succinimidyl esters," <u>Cytometry</u> 11:418-430 (1990)
	Talaat, A.M., et al., "Genome-directed primers for selective labeling of bacterial transcripts for DNA microarray analysis," <u>Nature Biotech.</u> 18:679-682 (2000)
	Tao, et al., "Genomics: Expression Analysis of Escherichia coli Growing on Minimal and Rich Media," <u>J. Bact.</u> 181:6425-6490 (1999)
	Wieringa, J.H., et al., "Adamantylideneadamantane Peroxide. A Stable 1,2 Dioxetane," <u>Tetrahedron Letters</u> 2:169-172 (1972)
	Zhu, Z., et al., "Directly labeled DNA probes using fluorescent nucleotides with different length linkers," <u>Nucl. Acids. Res.</u> 22:3418-3422 (1994)

EXAMINER

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Form PTO-1449 U.S. Department of Commerce

(REV. 8-83) Patent and Trademark Office

INFORMATION DISCLOSURE CITATION  
(use several sheets if necessary)Atty. Docket No.  
ENZ-61(D4)

Serial No. 10/763,104

Applicants: Ilan, et al

Filed: January 22, 2004

Group: Not yet known

## U.S. PATENT DOCUMENTS

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	5 6 2 7 0 2 7		Waggoner, et al			
	6 0 0 8 3 7 3		Waggoner, et al			
	5 2 7 0 1 8 4		Walker, et al			
	5 4 5 5 1 6 6		Walker, et al			
	4 7 1 1 9 5 5		Ward, et al			
	5 4 5 5 1 7 5		Wittwer, et al			
	6 1 7 4 6 7 0		Wittwer, et al			

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Enz-61(D4)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Ilan et al

Serial No. 10/763,104

Filed: January 22, 2004

Title: LABEL TARGET AND LABELING REAGENTS  
COMPRISING BACKBONES WITH AT  
LEAST TWO CONSECUTIVE PEPTIDE  
BONDS

Group Art Unit: Not yet known

Examiner: Not yet determined

527 Madison Avenue, 9<sup>th</sup> Floor  
New York, New York 10022  
March 8, 2004

**FILED VIA EXPRESS MAIL**

Mail Stop No-Fee Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 C.F.R. §§1.56 & 1.971.98**

Dear Sirs:

Pursuant to the provisions of 37 C.F.R. §1.971.98, and in full compliance with their duty of disclosure under 37 C.F.R. §1.56, Applicants, through their attorney, are bringing the following ninety-two (92) documents to the attention of the U.S. Patent and Trademark Office and the Examiner handling their above-identified application:

03/11/2004 EAREGAY1 00000041 051135 10763104

01 FC:1806 180.00 DA

Enz-61(D4)

Stavrianopolous, et al  
Serial No.: 10/763,104  
Filed: January 22, 2004  
Page 11 [Information Disclosure Statement – March 8, 2004]

The fee under 37 C.F.R. §1.17(p) for filing this Information Disclosure Statement is \$180.00. The Patent and Trademark Office is hereby authorized to charge the amount of this fee (and any other fees in connection with this IDS) to Deposit Account No. 05-1135, or to credit any overpayment thereto.

Respectfully submitted,



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Stavrianopolous, et al

Serial No.: 10/763,104

Filed: January 22, 2004

Page 2 [Information Disclosure Statement – March 8, 2004]

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**PRIORITY FIRST CLASS MAIL CERTIFICATE**

I hereby certify that this paper and any attachments herein are being deposited on the date below with the United States Postal Service as Priority First Class mail to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



Ronald C. Fedus  
Reg. No. 32,567

MAR 8 2004

Date

1. Ball, et al., "The use of tailed octamer primers for cycle sequencing," Nucl. Acids. Res. 26:5225-5227 (1998) [Exhibit 1];
2. Baranov, et al., "A new technique for the characterization of long-range tertiary contacts in large RNA molecules: insertion of a photolabel at a selected position in 16S rRNA within the Escherichia coli ribosome," Nucl. Acids Res. 25:2266-2273 (1997) [Exhibit 2];
3. Barany, et al., U.S. Patent No. 5,494,810, filed November 22, 1994 [Exhibit 3];
4. Bellhouse, et al., U.S. Patent No. 6,004,286, filed September 18, 1998 [Exhibit 4];
5. Bieniarz, et al., U.S. Patent No. 5,582,984, filed June 29, 1994 [Exhibit 5];
6. Bieniarz, et al., U.S. Patent No. 5,599,932, filed June 5, 1995 [Exhibit 6];
7. Bronstein, I.Y., U.S. Patent No. 4,978,614, filed July 20, 1989 [Exhibit 7];
8. Coassin, et al., U.S. Patent No. 5,462,854, filed April 19, 1993 [Exhibit 8];
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The ninety (90) foregoing references (numbers 1-90) were cited in the specification of the instant application.

A completed Form PTO-1449 listing the 90 above-submitted documents is also attached hereto as Exhibit 91.

By this voluntary citation of art, Applicants and their attorney are requesting that the documents be made of record in the present application.

The above citation of documents is not a representation that these documents constitute a complete or exhaustive listing, nor that the above listing necessarily includes the closest or most relevant documents, nor are these documents necessarily a complete listing of all documents known to Applicants or their attorney. It is simply a voluntary citation of documents made in good faith, which is not intended to serve in any way as a substitute for the Examiner's own search.

In view of the general and specific features described and claimed in the present application, Applicants respectfully submit that the present invention is neither disclosed nor suggested by the documents referred to above and is thus patentably distinct thereover. Furthermore, Applicants do not believe, and do not submit, by the citation of these references, that these documents, either by themselves or in combination with other documents, render the invention *prima facie* obvious under the duty of disclosure rules.

Applicants respectfully request that the Examiner make the above-submitted documents of record in the instant application. Applicants further request that the Examiner consider these documents as any of them may relate to the instant application.